

REMARKS

Claims 1-16, 18-20, 22-30, 32-35, 37-38, and 42-54 remain pending in the application. Claims 1, 22, and 52 are currently amended. Claims 17, 21, 31, 36, and 39-41 have been cancelled. Claims 37 and 38 are allowed. Applicants respectfully request for allowance of the pending claims based on following discussions.

Objections to the Drawings

The Examiner objects to the drawings to as failing to comply with 37 CFR 1.84(p)(4) because reference character “3” has been used to designate both “inlet region” (page 9, line5) and “inlet port” (page 7, line 2).

Applicants respectfully contend that the specification is consistent in that numeral “3” is used to designate “inlet region” and never used to designate “inlet port.” The specification on page 7, lines 2-4, reads “[i]f, for example, a single port was to be used **at** the inlet 3 of the pump, this may have a detrimental effect on the capacity of by-products that could be transported away from the evacuated chamber (not shown) by the pump.” It is clear from the sentence that numeral “3” is used to designate an “inlet” and never used to designate a “port.” The phrase “a single port was to be used **at** the inlet 3” suggests that the port and the inlet are two separate matters, and the port is located generally in the area of the inlet. This interpretation is also consistent with the drawings. For example, in FIG. 1, numeral “3” designates a broad region at which gas is introduced into the pump, whereas numeral “2” designates individual ports 2 through which a cleaning fluid is introduced to remove deposits in the pump. The sentence contemplates a hypothetical where a port 2 is move up to the inlet region 3, and explains that such

arrangement would be detrimental to the evacuation of by products from a process chamber.

Since the sentence cited by the Examiner does not support the conclusion that numeral “3” is used to designate “inlet port,” Applicants respectfully request further clarification of the assertion.

The Examiner also objects to the drawings to as failing to comply with 37 CFR 1.84(p)(4) because reference character “4” has been used to designate both “exhaust region” (page 9, line5) and “exhaust port” (see Fig. 4). However, Applicants are not clear about the assertion “reference character ‘4’ has been used to designate... ‘exhaust port’ (see Fig. 4).” According to Applicants’ record, numeral “4” is never shown in FIG. 4. Applicants respectfully request clarification as to where in the specification numeral “4” is used to designate an “exhaust port.”

Claim Objections

Claim 52 is objected to as being dependent on itself. In response, claim 52 has been amended to depend on claim 51. Thus, Applicants respectfully request that the objection be withdrawn.

Rejections under 35 USC 112

Claim 1 is rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner asserts that the claim language “*means for injecting a second fluid into the housing through the port in a first*

direction not in direct opposite to a second direction in which the first fluid flows into the housing via the inlet” is not supported by the specification.

A claim limitation needs not be literally and explicitly recited in the specification in order to comply with the first paragraph of 35 USC 112. *Hyatt v. Boone*, 146 F.3d 1348, 1353 (Fed. Cir. 1998). By disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory, or has an advantage, a patent application necessarily discloses that function, theory, or advantage, even though it says nothing explicit concerning it. *In re Reynolds*, 443 F.2d 384 (CCPA 1971). The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter. *Id.*

Although the claim language is not explicitly recited in the specification, it is disclosed inherently. As shown in FIG. 1, the ports 2 are arranged down stream of the inlet region 3, and convey cleaning fluid toward the rotors 1. As understood by people skilled in the art that the inlet region 3 draws gas also toward the rotors 1. It is inherent that the gas flowing through the inlet region and the cleaning fluid through the ports must not be in directly opposed directions.

The specification clearly advises to implement the ports 2 several threads away from the inlet region 3 in order to avoid the cleaning fluid contaminating the process chamber. As described in the first paragraph on page 7,

If, for example, a single port was to be used at the inlet 3 of the pump, this may have a detrimental effect on the capacity of by-products that could be transported away from the evacuated chamber (not shown) by the pump.

By bringing solvent into contact with the rotor 1 after first few turns of the

thread, the likelihood of backward contamination of the solvent into the chamber will be reduced.

Since the ports are several threads away from the inlet region, the direction of the cleaning fluid flow and the direction of the gas down into the pump through the inlet region would not be directly opposed.

As such, Applicants submit that the claim limitation at issue is inherently disclosed in the original specification, and therefore respectfully request that the rejections under section 112, the first paragraph, be withdrawn.

Rejections under 35 U.S.C. §102

Claims 1-3, 9, 10, 18, 22-24, 34, 51, 52, and 54 are rejected under 35 USC 102(b) as being anticipated by US Patent No. 4,984,974 to Naya et al. (hereinafter referred to as “Naya”).

Independent claim 1, as amended, includes additional limitation “*wherein the second fluid comprises a reactive substance for reacting with deposits on the surface of the rotor and the surface of the stator.*”

Naya does not teach a fluid that reacts with deposits on the surfaces of the rotor and stator. It is true that Naya teaches a port 16, through which a purge gas is introduced toward a rotor 5. *See, FIG. 1.* However, such purge gas is inert gas that does not react with the deposits on the surface of the rotor 5. *See, col. 3, lines 7-10.* Thus, Naya fails to teach each and every element of claim 1, and cannot anticipate the same under 35 USC 102(b).

Independent claims 18 and 22 include similar limitations. For the reasons discussed above, they are also patentable over Naya under 35 USC 102(b). Accordingly, claims 2, 3, 9, 10, 23, 24, 34, 51, 52, and 54 that depend from claims 18 and 22 and include all the limitations recited therein are also patentable over Naya under 35 USC 102(b).

Rejections under 35 USC 103

Claims 4-8, 13-17, 19, 20, 25-30, 32, 33, 42-50 and 53 are rejected under 35 USC 103(a) as being unpatentable over Naya in view of US Patent Application Publication No. 2002/0141882 to Ingistov et al. (hereinafter referred to as “Ingistov”).

The rejections under 35 USC 103 is improper, because Ingistov teaches away from Naya and therefore they cannot be combined. Naya teaches a port 16 for introducing inert gas into a pump to purge the rotor 5. *See, FIG. 1*. The inert gas is adiabatically compressed to generate heat for preventing particulates from accumulating on the rotor. *See, the abstract*. Ingistov, however, is directed to a method for spreading a mist of liquid in a compressor in order to reduce the temperature of the same, thereby increasing its compression efficiency. *See, paragraph [0009]*. It would not have been obvious for a person skilled in the art to modify Naya by replacing the inert gas with Ingistov’s mist of liquid, because doing so would lower the temperature, and therefore promote the accumulation of particulates on the surfaces of rotors and stators.

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983). Since Naya and Ingistov teach away from each other, it is improper to combine them in rejecting the

claims. As such, Applicants respectfully request that the rejections against claims 4-8, 13-16, 19, 20, 25-30, 32, 33, 42-50 and 53 be withdrawn. It is noted that claim 17 has been cancelled.

Claims 11 and 12 are rejected under 35 USC 103(a) as being unpatentable over Naya. As discussed above, independent claim 1, as amended, is patentable over Naya. Accordingly, claims 11 and 12 that depend from claim 1 and include all the limitations recited therein are also patentable over Naya under 35 USC 103(a).

Allowable Claims

Applicants acknowledge and appreciate that claims 37 and 38 are allowed. Applicants acknowledge with appreciation that claim 35 is allowable if rewritten in independent form.

CONCLUSION

Applicants have made an earnest attempt to place this application in an allowable form. In view of the foregoing remarks, it is respectfully submitted that the pending claims are drawn to a novel subject matter, patentably distinguishable over the prior art of record. The Examiner is therefore, respectfully requested to reconsider and withdraw the outstanding rejections.

Applicants do not believe that any additional fee is due, but as a precaution, the Commissioner is hereby authorized to charge any additional fee to deposit account number 50-4244.

Should the Examiner deem that any further clarification is desirable, Examiner is invited to telephone the undersigned at the below listed telephone number.

Respectfully submitted,

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